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The Macroeconomic Impact of Federal Pollution Control Programs: 1981 Assessment

Data Resources, Inc.
Lexington, MA

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THE MACROECONOMIC IMPACT OF FEDERAL POLLUTION CONTROL PROGRAMS 1981 ASSESSMENT

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DATA RESOURCES, INC.

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This report analyses the impact of the cost of federally mandated pollution control expenditures on such measures of macroeconomic performance as real GNP, price levels, and employment. Using an elaborate econometric model of the economy, DRI adjusts the appropriate equations to reflect the lower costs associated with the absence of pollution control regulations, resimulates the economy with the adjusted equations, and then derives an estimate of the economic impact of the regulatory costs by comparing the resulting simulations. Only costs due to federal regulations are removed. Because of data limitations, it is not possible to adjust the low pollution control cost simulation for the changes in benefits which would occur with the removal of federal pollution control regulations

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INTRODUCTION

This study presents an analysis of the macroeconomic impacts of federal air and water pollution control regulations on the United States economy.[1] The study does not include the value of improvements in the quality of life which are not priced by the market system. The analysis uses Environmental Protection Agency (EPA) estimates of the incremental costs of federal pollution control regulations for the period 1970-1987. For each industry, estimates were made for the capital investment, annualized capital costs, and operating and maintenance costs by industry. Estimates were also made of the costs of state and local governments' pollution control activities, and the cost to consumers and business of mobile source regulations. The estimates reflect only the "incremental" costs, i.e. the additional costs incurred solely as a result of federal regulations. Those additional costs which would have been undertaken in the absence of federal regulations are included in the macroeconomic "without" scenario (described below).

The analysis used the Data Resources, Inc. (DRI) macroeconomic model of the U.S. economy and covered the period 1970-1987. The analysis compared what economic conditions would have been without the costs of federal regulations to what economic conditions would have been with the costs of federal regulations. A baseline simulation, representing the performance of the economy under current EPA regulations, was constructed using the actual data for 1970-1980 and the TRENDLONG0281 forecast for 1981-1987. This baseline simulation is called the "with" pollution control costs scenario. Appropriate adjustments were made to the "with" simulation to remove the incremental costs of federal pollution control. This simulation is called the "without" pollution control costs simulation. A comparison of the "with" and "without" simulations gives an assessment of the direct and indirect macroeconomic effects of federally induced pollution control costs on economic performance. Because the loss of benefits which results from removing regulations is not considered in this study, the results presented here cannot be taken as indicative of what would actually happen if regulations were to be removed.

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[1] This study updates a previous DRI study, "The Macroeconomic Impact of Federal Pollution Control Programs-1979 Assessment."

To supplement this "base-case" analysis, three other simulations were performed. The first additional simulation analyzed the macroeconomic effects of possible government efforts to offset the effects of federal incremental costs of pollution control by pursuing a non-accommodating monetary policy. The second and third simulations analyzed the effects of incremental costs being either higher or considerably lower respectively than estimated in the original "with" case.

PRINCIPAL CONCLUSIONS

The incremental costs from Federal pollution control regulations have had four major effects.

1. Price increases are moderately higher. The costs per unit of output are raised by the federal regulations and these higher costs are eventually translated into higher prices. For example, the average annual rate of increase in the consumer price index (CPI-U) is 0.4 percentage points higher over the period 1970-1987 than would be the case in the absence of environmental regulations. The average annual rates of increase in the Producer Price Index (PPI) and GNP deflator are 0.5 and 0.4 percentage points higher, respectively, over the same period.

2. Until 1977, the real level of economic activity, as measured by gross national product, is stimulated by the incremental investment required under federal regulations and the additional activity generated by industries producing pollution control plant and equipment. In 1972, real GNP increases $9.2 billion or 0.5%. After 1979, the real level of economic activity declines as the higher price level reduces aggregate real output. Over the period 1970-1987, the average annual rate of growth of real GNP is reduced by 0.1 percentage point. Real GNP in 1987 is $21.8 billion or 0.7% lower.[2]

3. Employment is stimulated throughout the 1970-1987 period. Jobs are created in the pollution control equipment industry and in all industries to operate and maintain pollution equipment and facilities. The unemployment rate is on average 0.3 percentage points lower over the period. By 1987, there is a net increase of 524,000 additional jobs as a result of pollution controls.

4. Real business fixed investment is stimulated by the incremental investment mandated under federal regulation and by the additional activity generated by industries producing pollution control plant and equipment. In 1973, real business fixed investment is up $6.0 billion or 2.6%. Eventually, the combined effects of higher prices, increased interest costs, and reduced aggregate demand dampen investment spending. By 1987, real business fixed investment is only $0.9 billion or 0.3% higher.

IMPACT ON PRICES

In reducing pollution, the incremental costs from Federal regulation impose higher costs on firms and are passed through as higher product prices. The higher costs stem from two sources: first, labor and materials costs per unit of output are raised, as the additional labor and material inputs needed to operate and maintain pollution control equipment generate no additional output in a form measurable by the national income accounts. Second, the investment needed to produce a given level of output is raised, as the incremental investment costs produce no additional "measured" output. By 1987, the GNP deflator is 7.4% higher, raising its average annual rate of increase by 0.4 percentage point per year. Consumer prices, as measured by the consumer price index, are 6.6% higher, raising their average annual rate of increase 0.4 percentage point per year. Wholesale prices, as measured by the PPI, are 9.0% higher, raising their average annual rate of increase 0.5 percentage point.

The effect on prices rises over time, as the incremental costs of federal regulations rise rapidly. From 1980 to 1987, real incremental costs from federal regulations rise 48%, while real GNP in the "with" case rises 21%.

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[2]Unless otherwise noted, all figures in real terms are expressed in constant 1979 dollars. All price indexes are based as 1979=1.

IMPACT ON REAL OUTPUT

The impact on real output varies over time. Initially, the incremental costs from federal regulations stimulate the economy. Increased operating and maintenance costs require extra workers and materials, and increased costs for pollution control plant and equipment represent increased demands on the industries that build them. Eventually, given the assumptions that profit margins are not reduced, firms pass on the full amount of higher costs into higher product prices, which dampen aggregate demand and counteract the initial stimulus.

Until 1980, real GNP is higher in the "with" case. The positive gap peaks in 1972, with real GNP up $9.2 billion or 0.5%. During the 1973 boom period and the subsequent downturn, this positive gap narrows significantly. Higher prices due to incremental costs reduce consumption spending and exports and raise imports. Incremental costs drive up unit costs of output, reducing productivity and aggregate supply. This drag on economic growth caused by pollution control costs is magnified over time. By 1987, real GNP is $21.8 billion or 0.7% lower.

IMPACT ON EMPLOYMENT AND PRODUCTIVITY

The incremental costs from federal pollution control regulations stimulate employment. Production, installation, and maintenance of pollution control plant and equipment creates jobs. However, this additional labor input does not generate additional measured output. In addition, productive capital per worker is lower, as the capital stock is diluted with the portion of capital required to control pollution. As a result, productivity growth declines on an average annual basis of 0.1 percentage point, as more resources are needed to produce the same amount of output. However, the employment required to comply with EPA's regulations is estimated to make the unemployment rate is 0.3 percentage point lower in the "with" case. By 1987, there are 524,000 additional jobs as a result of pollution control requirements.

BUSINESS FIXED INVESTMENT

Initially, incremental costs from federal pollution control regulations stimulate real business fixed investment. Firms require additional pollution control plant and equipment to meet federal standards. This boosts not only their own investment but also investment by firms that produce the pollution control plant and equipment. The stimulative effect peaks in 1973, with real business fixed investment up $6.0 billion, or 2.6% above what it would have been without federally required pollution controls. The stimulative effect tapers off as higher prices drive up interest rates and reduce aggregate demand. By 1987, real business fixed investment is $0.9 billion or 0.3% higher.

Investment for pollution control plant and equipment tends to reduce other kinds of investment, including housing. The degree of reduction varies with economic conditions and increases as the economy approaches full employment.[3] At full employment, mandated investment is assumed to replace other investment on a dollar-for-dollar basis. While total investment is higher, real "productive" business fixed investment (defined as total real business fixed investment minus real business fixed investment for pollution control) is lower in the "with" case. By 1987, real productive business fixed investment is $13.9 billion or 4.0% lower.

HOUSING

The slowdown in aggregate demand and incomes, combined with higher interest rates, reduces housing starts. The reduction, as measured by the differential between the two simulations, exhibits a very mild cyclical pattern. By 1987, housing starts are 115,000 units or 5.2% below the "without" case.

ESTIMATES OF INCREMENTAL POLLUTION CONTROL COSTS

The estimates of incremental pollution control costs from federal regulations were made by the EPA. The historical estimates are consistent with estimates

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[3]The critical assumptions of the basic analysis are described below, in the section entitled, "The Underlying Economic Path-The "With" Scenario."

collected and developed by the Census Bureau of the Department of Commerce. Incremental pollution control costs include only those costs as a result of federal air and water control requirements. They were broken down by 18 categories: 16 industrial categories, state and local municipal wastewater treatment facilities, and mobile source emissions.

The estimates were further broken down into incremental operating and maintenance costs, and incremental investment costs. Incremental operating and maintenance costs are the labor and material costs associated with operation and maintenance of pollution control plant and equipment. Incremental investment costs are the purchases of pollution control plant and equipment.

The EPA estimates of incremental costs are given in Tables 1 and 2. Total incremental costs rise from $6.4 billion (1979 dollars) in 1970 to $44.8 billion in 1987, an increase of 12.1% per year. Incremental operating and maintenance costs rise from $3.0 billion in 1970 to $24.8 billion in 1987, an increase of 13.2% per year. Incremental investment rises from $3.4 billion in 1970 to $20.0 billion in 1987, an increase of 11.0% per year. As a percent of total plant and equipment investment (in current dollars), incremental investment rises from 1.5% in 1970 to a peak of 3.9% in 1984 and falls to 3.4% in 1987.

THE UNDERLYING ECONOMIC PATH--THE "WITH" SCENARIO

The impact of pollution control costs depends upon the underlying state of the economy. The analysis covers the period 1970-1987, which contains many variations in the pace of economic activity and rate of inflation. The historical period (1970-1980) begins with the 1970 recession, in which real GNP dropped by 0.2%. The recovery began in late 1970. By 1973, the economy was booming and was operating at or near full employment. The recovery came to a halt due to a variety of factors--quadrupling of crude oil prices by OPEC, large increases in farm prices due to poor harvests worldwide, inflationary pressures emanating from the strong growth in the U.S. and elsewhere, the abandonment of wage and price controls, and a slowdown in monetary growth by the Federal Reserve, designed to reduce inflation. The economy began to recover in late 1975, and the recovery lasted until early 1980. Economic growth plunged in mid-1980 but recovered quickly in the latter half of the year. However, the rate of inflation remained very high by post-war standards.

The forecast period 1981-1987 is consistent with DRI's long-term trend simulation TRENDLONG0281. The recovery begun in 1980 continues, but is weak by historical standards. Continual increases in real oil prices, low growth in the labor force due to demographic factors, a monetary stance which remains tough on inflation, and general uncertainty about the economy contribute to slow growth. The forecast of a near full-employment economy in 1987 serves to maximize the effect of pollution controls on the price level. The rate of inflation unwinds slightly as the economy is assumed not to suffer from external price shocks i.e., abrupt changes in food and fuel prices are not projected to occur. Both the historical and forecast periods incorporate the full costs of pollution control. As such, they define the "with" scenario.

The major assumptions in the basic analysis that define the "with" scenario in the period 1981-1987 are:

- Energy Prices--prices of foreign crude oil will increase about 3% per year in real terms relative to wholesale prices.
- Monetary Policy--the money supply (M1B) will increase about 6% per year.
- Tax Policy--legislation will be enacted that results in a one-time reduction of 40% in effective asset lifetimes; the Kemp-Roth proposal to reduce personal income tax rates will be phased in during the 1981-85 period.
- Federal Spending--federal spending will be very tight, increasing only about 2% per year in real terms.
- Demographics--there will be slowing in the rate of increase in the labor force, due to the maturation of the baby boom.

DIRECT CHANGES TO REMOVE INCREMENTAL POLLUTION CONTROL COSTS--THE "WITHOUT" SCENARIO

A number of changes were made to the "with" scenario to remove the incremental costs of federal pollution control regulation (thereby defining the "without" scenario). A brief list of these changes is given below.[4] A more detailed explanation of these changes is given in the technical appendix.

[4] These adjustments take no account of the loss of benefits which would occur if the regulations were removed.

1. Plant and equipment investment by industry was decreased by the amount of the incremental investment costs estimated by EPA.

2. The cost of new investment was lowered as firms now need to invest less to produce a given amount of output.

3. Since many pollution control investments can be financed less expensively in municipal bond markets, financing costs were raised slightly.

4. Prices by industry were reduced to reflect decreased production costs, as less labor and material are needed to produce a given level of output. These reduced costs were passed through into lower product prices according to a simple model of industrial price determination constructed for this study.

5. Employment was reduced since the workers required to produce, install and maintain pollution control plant and equipment would no longer be needed.

6. As the federal government makes grants-in-aid to state and local governments to construct municipal waste water pollution control facilities, grants-in-aid were reduced by amounts estimated by the EPA.

7. Prices of new motor vehicles were reduced to incorporate the reduced costs of emission control devices.

8. Investment by firms to purchase new vehicles was reduced to reflect the reduced costs of emission control devices.

9. Consumer expenditures for vehicle maintenance were reduced to incorporate the lower costs for maintaining emission control devices.

10. Consumer expenditures for gasoline were reduced as vehicles would achieve higher mileage without emission control devices.

ECONOMIC IMPACTS—FURTHER DISCUSSION

The economic impacts of incremental pollution control costs from federal environmental regulations are discussed by sector. The economic impacts are drawn up by comparing the "without" scenario--a simulation without the incremental costs--to the "with" scenario--a simulation with the incremental costs.

PRICES

The incremental costs of federal pollution control raise the rate of price increase in three ways.

1. The operating and maintenance costs raise the unit cost of output. A firm now requires additional labor and materials to produce a given level of output. A firm is producing a joint product of its output and a cleaner environment, although the benefits from the cleanup are not incorporated in this analysis.

2. Incremental investment costs raise the capital cost per unit of output. A firm's capital is diluted by the portion required to control pollution rather than produce output.

3. Incremental investment needed to meet the federal regulations increases demand on the industries supplying those investment goods and their suppliers. The impact on prices depends on underlying economic conditions. The impact is accelerated in the 1972-1973 and 1977-1979 boom periods, when the economy was already experiencing price pressures.

Initially, incremental pollution costs reduce corporate profits, until firms can pass these added costs into higher product prices. The speed of this pass-through was determined on an industry-specific basis, using a simple model relating prices to unit costs, productivity, and capacity utilization. Labor productivity declines for two reasons. First, more workers are required to produce a given level of output, as some workers operate and maintain the pollution control equipment. Second, productive capital per worker is lower, as the capital stock is diluted with the portion of capital required to control pollution. Productivity is 0.3% lower in 1980 and 0.9% lower in 1987. Productivity growth falls 0.1 percentage point per year on average over the entire period.

The impact on the rate of price increase is noticeable, given the increases in unit costs, reduced productivity, and added demand pressures. The producer price index is 4.1% higher in 1980 and 9.0% higher in 1987. The average annual rate of change in producer prices is raised 0.5 percentage point over the period 1970-1987. The effect on consumer prices is smaller, with their average annual rate of change increased 0.4 percentage points per year.

BUSINESS FIXED INVESTMENT

The incremental investment costs to industry (excluding state and local costs and mobile source costs) rise from $2.9 billion in 1970 to $7.6 billion in 1980. The costs peak at $11.9 billion in 1986 and fall slightly to $11.6 billion in 1987. Over the historical period 1970-1980, incremental investment costs average 2.4% of total plant and equipment investment. Over the forecast period 1981-1987, this ratio averages 3.6%.

Incremental investment costs increase total business fixed investment. Incremental investment represents increased demands on industries that produce pollution control plant and equipment. These increased demands generate additonal output and employment which in turn increased investment. Business fixed investment rises, with the peak stimulative effect occurring in 1973, up $6.0 billion or 2.6% from those levels that would otherwise have occurred. Eventually, higher rates of price increase drive up interest rates and reduce demand so that in 1987, investment is up only $0.9 billion or 0.3%.

The effect on "productive" (excluding pollution control) investment is more pronounced. Incremental investment costs raise the effective cost of investment. More investment is now required to produce a given level of output, causing firms to require a higher rate of return from productive investment. This increased rate of return depresses investment. The negative impact of a higher required rate of return (as well as reduced aggregate demand and higher interest rates) is greater than the positive stimulus to investment from the incremental costs. By 1987, productive investment is $13.9 billion or 4.0% lower.

INTEREST RATES

Incremental pollution control costs raise interest rates significantly, as investors require higher nominal interest rates to compensate them for the costs of lending that stem from higher price increases. Interest rates increase steadily as prices rise. Higher prices also generate an eventual reduction in real activity, which reduces pressures on interest rates as loan demands subside. For example, the increase in the federal funds rate peaks at 1.87 percentage points in 1982 and declines to 0.80 percentage point in 1987. Interest rates do rise more than enough to cover the price increases so that, in general, real interest rates are higher.

HOUSING

Higher interest rates drive down business fixed investment and reduce housing activity. Housing starts are lower in every year, but the decline varies over time. In 1979, near the end of the economic expansion, housing starts are 88,000 units or 4.3% lower. In 1987 when the economy is approaching full employment, so that competing investment demands dry up traditional mortgage funds, housing starts are lower by 115,000 units or 5.2%.

CONSUMER SPENDING

Initially, real consumer spending rises because of incremental costs of emission controls to meet federal regulations. Vehicle emission controls increase maintenance expenditures and, (because fuel consumption is increased), gasoline purchases rise; they also increase car prices, which tends to drive down vehicle purchases. Secondary effects from increased activity in firms producing pollution control plant and equipment and their suppliers also tend to raise consumer spending initially . However, by 1977, consumer spending falls in response to higher prices and interest rates. By 1987, consumer spending is $18.7 billion or 1.0% lower. Purchases of motor vehicles and parts are particularly hard hit, down $7.0 billion or 5.8%. The only consumer spending categories still higher in 1987 are gasoline and transportation services (maintenance expenses).

GOVERNMENT

FEDERAL

In this analysis, federal expenditures are assumed to be constant in real terms. This means that the federal government maintains a specific level of services and adjusts the dollar level of spending in response to changing price levels. For this reason, nominal expenditures are higher because prices are higher. Receipts are also higher, but by a smaller amount, as the higher price level boosts nominal incomes and taxes. Initially, real incomes are also higher, due to the increased economic activity which further boosts tax receipts. However, the net effect on the federal deficit is negative after 1974. By 1987, the deficit is $10.2 billion larger in current dollars.

STATE AND LOCAL GOVERNMENTS

Federal regulations require state and local governments to construct waste water treatment facilities. Seventy-five percent of construction costs are funded from federal grants-in-aid. However, the state and local governments are responsible for the higher operating and maintenance costs associated with these facilities and for municipal air pollution control costs. The net effect of pollution control requirements is a slight increase in real spending. In 1987, real purchases are $1.2 billion, or 0.4% higher.

FOREIGN TRADE

Higher pollution control costs increase domestic prices, which reduce real exports and raise real imports. The initial stimulus to aggregate activity drives up imports, but, eventually, as economic activity declines, imports also decline. In 1973, real imports are $2.4 billion (or 1.2%) higher, but by 1987, they are $3.7 billion or 1.1% lower. The stimulative effect on real exports is mild, with real exports down by $0.4 billion or 0.2% in 1974. After that, exports are higher as foreign economy activity does not decline as much as in the U.S. In 1979, real exports are $1.3 billion, or 0.4% higher. The situation reverses again in 1986, as the greater domestic price increases drive down exports. By 1987, real exports are $2.0 billion,

or 0.5% lower. The net effect on the current dollar trade balance is mildly negative until 1982; after 1982, the effect is positive but becomes negative in 1986. By 1987, the current dollar trade balance is $1.9 billion lower.

CONCLUSION

The principal results of this analysis are given below and are summarized in Table 3.

1. The average annual rate of increase in consumer prices rises 0.4 percentage points in the period 1970-1987 as firms pass on the higher costs of pollution control.

2. Until 1980, the real level of GNP is higher, stimulated by the federally mandated incremental investment and operating and maintenance costs and by the additional activity in industries supplying pollution control plant and equipment. In 1972, real GNP is $9.2 billion or 0.5% higher. After 1979, real GNP declines in response to the higher price level. By 1987, real GNP is $21.8 billion or 0.7% lower. The average annual rate of growth of GNP is reduced 0.1 percentage point.

3. Employment is stimulated throughout the 1970-1987 period as jobs are created in industries to operate and maintain pollution control plant and equipment and in the pollution control plant and equipment (supplier) industry. In general, the unemployment rate is 0.3 percentage points lower, and by 1987 there are 524,000 net additional jobs as a result of pollution controls.

4. Business fixed investment is stimulated by the incremental investment mandated by federal regulations and the additional activity generated in industries that produce that pollution control plant and equipment. In 1973, real business fixed investment rises by $6.0 billion, or 2.6%. Eventually, the combined effects of higher prices, increased interest costs and reduced aggregate demand dampen investment spending. By 1987, real business fixed investment is only $0.9 billion or 0.3% higher.

SENSITIVITY ANALYSIS

Three alternative simulations were performed. The first two simulations analyze the effects of slightly higher or considerably lower mandated pollution costs. The third simulation analyzes the effects of a monetary policy that attempts to neutralize the money supply increases induced by pollution control costs.

Case 1: Higher Pollution Control Costs

The base case "with" simulation included certain recently announced reductions in municipal wastewater treatment construction grants and mobile source emissions control costs. The "with high" pollution control cost simulation includes those costs. In 1981, these higher costs add $861 million (or 2.5%) to the mandated incremental costs. By 1987, they add $2659 million (or 5.9%) (Tables 4 and 5). The total increase in incremental costs from 1979 to 1987 is $12.6 billion or 2.6%. The results from the "with high" simulation are very similar to the "with" base case results, and are shown in Table 7.

Case 2: Lower Pollution Control Costs

A second simulation was constructed to examine the macroeconomic effects of future incremental pollution control costs being much lower than those used in the "with" base case simulation. This was called the "with low" simulation, in which a gradual tapering off of incremental costs by 10% per year beginning in 1981 was assumed. By 1987, total incremental costs had fallen to $13.4 billion or 30% of the base case analysis estimates (Tables 4 and 5). The total reduction in incremental costs is $116.9 billion, or 23.8%. The results are compared to the "with" base case simulation in Table 8.

A decline in future real incremental costs reduces the effects of pollution control on prices. By 1987, the level of the implicit price deflator has fallen 0.9% relative to the "with" base case, and its annual rate of change has fallen to 7.7% per year. This decline in incremental costs removes only 15% of the price effects of pollution control costs.

The effects on real GNP are less pronounced. Initially, reduced incremental costs reduce real GNP. Reduced operating and maintenance costs require fewer workers and materials and decreased investment costs represent a decrease in demand on those industries that produce pollution control capital. Eventually, firms pass on the full amount of these lower costs as lower product prices, which stimulate aggregate demand and counteract the initial output reduction. By 1987, real GNP is $1.6 billion higher, while the unemployment rate remains 0.3 percentage points higher. Business fixed investment is down $5.6 billion or 1.6% in 1987, while productive investment is $4.5 billion, or 1.4% higher.

Case 3: Non-Accommodating Monetary Policy

The increase in nominal GNP due to pollution control costs implies an increased transactions demand for money. The money supply in the base case analysis increases to accommodate this higher transactions demand. A simulation was constructed in which the money supply does not accommodate this increased demand. Rather, nonborrowed reserves, the main policy lever of the Federal Reserve Board, are reduced in order to hold the money supply (as defined as M1-B) to its level in the "without" simulation (Table 6). This simulation is called "offset" and is compared to the base case simulation in Table 9.

Non-accommodating monetary policy dampens aggregate demand by raising interest rates and depressing interest sensitive sectors of the economy such as housing. By 1987, real GNP falls $9.3 billion or 0.3%, and the unemployment rate is 0.1 percentage point higher. Business fixed investment is down $0.8 billion or 0.2% by 1987, while productive investment falls $0.4 billion or 0.1%. Reduced aggregate demand also reduces prices. By 1987, the level of the implicit price deflator is down 1.9%, and its average annual rate of change falls to 7.6%. This means that about one-fourth of the inflationary effect of pollution control costs on prices can be attributed to the money supply assumptions in the base case.

SUMMARY

A comparison of the alternative simulations is shown in Table 10.

Table 1
Estimated Incremental Operating and Maintenance Costs
For Pollution Control, 1970-1987
(Millions of 1979 dollars)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
TOTAL	3023	[illegible]	6236	8622	9531	9965	10544	11375	12299	13579	14605	15936	17300	18329	20140	21625	23093	24830
All Indus.	959	1349	1864	2612	3386	4134	4944	5729	6489	7440	8427	9492	10812	12204	13768	15440	17114	18789
Mfg. Indus.	486	762	986	1403	1836	2302	2841	3311	3753	4270	4788	5385	6144	6931	7831	8805	9791	10770
Primary Metals	169	210	265	349	438	539	674	789	898	996	1101	1232	1379	1524	1684	1836	1980	2119
Elec. Machinery	3	6	10	18	25	32	37	42	47	71	91	114	146	181	224	275	334	398
Non-elec. Mach.	4	6	9	15	22	29	34	40	45	62	75	90	107	122	140	165	186	207
Transp. Equip.	4	16	31	51	72	91	102	113	123	162	206	265	343	436	545	670	794	917
Stone, Clay, Glass	1	12	26	48	71	101	123	134	144	163	181	202	231	270	315	368	424	484
Oth. Durables	7	18	35	62	92	130	160	181	200	237	270	310	357	413	476	547	615	682
Food incl. Beverage	9	24	43	68	94	117	135	156	177	196	212	229	249	272	300	335	371	412
Textiles	6	8	10	14	17	20	24	29	34	37	40	43	49	57	65	76	88	98
Paper	6	35	72	122	173	242	322	372	420	448	484	520	556	604	651	698	745	791
Chemical	177	213	257	315	374	450	552	671	785	852	905	963	1116	1270	1478	1726	1990	2249
Petroleum	96	148	220	328	441	527	648	747	837	993	1159	1343	1526	1681	1833	1969	2102	2232
Rubber	2	3	3	5	6	9	11	13	15	21	27	33	40	47	56	66	78	89
Oth. Nondurables	2	3	5	8	11	15	19	24	28	32	37	41	45	54	64	74	84	92
Nonmanufacturing	473	674	878	1209	1550	1832	2103	2418	2736	3170	3639	4107	4668	5273	5937	6635	7323	8019
Mining	54	60	69	81	92	95	102	111	116	132	148	165	184	203	224	245	268	290
Public Utilities	400	540	727	997	1276	1537	1780	2066	2359	2755	3189	3615	4119	4667	5271	5910	6537	7172
Commercial	19	47	82	131	182	200	221	241	261	283	302	327	365	403	442	480	518	557
State and Local Govt.	0	27	61	100	175	284	398	537	692	832	983	1134	1268	1380	1486	1583	1672	1752
Mobile Source Controls	2064	3019	4311	5910	5970	5547	5202	5109	5118	5307	5195	5310	5220	4745	4886	4602	4307	4289

Table 2
Estimated Incremental Investment For Pollution Control, 1970-1987
(Millions of 1979 dollars)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
TOTAL	3375	5086	6558	7524	8418	10308	11745	11633	13036	13536	15641	19192	18787	20153	20416	20359	20319	19979
All Indus.	2872	3807	5480	5665	5422	6054	5779	5574	6760	7019	7573	9454	9898	11109	11861	11855	11858	11577
Mfg. Indus.	1694	2256	3272	3385	3613	4290	3733	3521	3951	3977	4541	5797	5960	6810	7332	7390	7352	7119
Primary Metals	314	422	650	686	772	1042	880	840	752	811	1010	1131	1110	1235	1168	1108	1066	1010
Elec. Machinery	16	26	41	42	40	27	29	26	130	114	126	177	194	240	285	328	354	309
Non-elec. Mach.	12	22	41	43	46	35	40	36	111	88	97	114	100	125	161	145	140	142
Transp. Equip.	69	88	120	124	110	63	65	62	224	261	350	455	546	644	734	728	728	760
Stone, Clay, Glass	89	118	183	195	249	183	88	82	164	145	176	245	327	369	442	470	499	459
Oth. Durables	55	84	139	146	190	152	106	96	181	166	199	235	281	317	355	338	336	343
Food incl. Beverage	137	174	230	234	206	162	196	188	172	148	150	188	209	251	321	323	375	386
Textiles	19	25	32	32	30	42	50	48	29	31	36	51	81	84	112	113	108	105
Paper	243	310	416	424	569	668	419	396	239	297	300	300	397	394	393	390	388	305
Chemicals	293	372	485	491	626	857	990	945	565	440	476	1281	1284	1732	2066	2196	2162	2274
Petroleum	436	598	903	935	720	1010	820	757	1294	1385	1536	1521	1293	1267	1134	1110	1081	921
Rubber	2	6	13	14	32	18	21	20	58	62	58	68	78	88	96	76	56	55
Oth. Nondurables	11	13	19	20	26	30	28	27	32	29	27	31	60	64	65	65	59	50
Nonmanufacturing	1178	1551	2207	2280	1809	1764	2046	2053	2809	3042	3032	3657	3938	4299	4529	4465	4506	4458
Mining	69	88	115	115	28	74	83	57	152	167	171	186	194	203	215	224	220	216
Public Utilities	876	1167	1687	1743	1634	1516	1790	1833	2472	2715	2658	3151	3426	3776	3994	3921	3964	3920
Commercial	234	296	407	422	147	175	172	164	185	160	203	320	318	320	320	320	322	322
State and Local Govt.	-32	573	362	167	1610	1809	3079	2699	2844	2831	2838	2530	2024	1961	1340	1252	1160	1044
Mobile Source Controls	535	706	716	1692	1386	2445	2887	3360	3432	3686	5230	7208	6865	7083	7215	7252	7301	7358

Table 3
Estimated Impact of Incremental Pollution Control Costs, 1970-1987

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Gross National Product																		
WITHBASE	992.8	1077.6	1186.3	1327.2	1435.3	1549.9	1718.7	1920.2	2159.6	2417.9	2632.7	2924.7	3318.0	3732.5	4180.7	4737.2	5268.7	5847.0
WITHOUT	989.5	1070.8	1176.2	1312.7	1417.7	1527.2	1688.7	1883.3	2114.5	2359.0	2558.4	2832.3	3202.5	3587.2	4000.7	4508.0	4978.2	5484.5
DIFF	3.3	6.8	10.1	14.5	17.6	22.6	30.0	36.9	45.0	58.8	74.3	92.4	115.5	145.3	180.0	229.1	290.5	362.5
%DIFF	0.3	0.6	0.9	1.1	1.2	1.5	1.8	2.0	2.1	2.5	2.9	3.3	3.6	4.1	4.5	5.1	5.8	6.6
Real GNP (79$)																		
WITHBASE	1770.5	1830.6	1934.8	2047.2	2034.8	2011.9	2119.9	2237.3	2344.5	2417.9	2414.6	2428.6	2510.3	2582.5	2669.9	2780.0	2849.4	2927.3
WITHOUT	1766.1	1822.9	1925.6	2038.3	2028.5	2007.3	2115.2	2234.8	2343.9	2417.7	2415.9	2432.6	2517.3	2591.8	2682.6	2795.6	2867.2	2949.1
DIFF	4.4	7.7	9.2	8.9	6.3	4.7	4.7	2.5	0.6	0.2	-1.3	-4.0	-6.9	-9.3	-12.7	-15.6	-17.9	-21.8
%DIFF	0.2	0.4	0.5	0.4	0.3	0.2	0.2	0.1	0.0	0.0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.6	-0.7
Annual Rate of Change																		
WITHBASE	-0.2	3.4	5.7	5.8	-0.6	-1.1	5.4	5.5	4.8	3.1	-0.1	0.6	3.4	2.9	3.4	4.1	2.5	2.7
WITHOUT	-0.4	3.2	5.6	5.9	-0.5	-1.0	5.4	5.7	4.9	3.1	-0.1	0.7	3.5	3.0	3.5	4.2	2.6	2.9
DIFF	0.2	0.2	0.1	0.0	-0.1	-0.1	0.0	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
%DIFF	-57.9	5.6	1.0	-0.7	25.8	7.5	-0.2	-2.0	-1.9	-0.5	81.0	-16.1	-3.3	-2.9	-3.4	-2.1	-2.5	-4.3
Prices																		
Implicit Price Deflator (79=1.000)																		
WITHBASE	0.561	0.589	0.613	0.648	0.705	0.770	0.811	0.858	0.921	1.000	1.090	1.204	1.322	1.445	1.566	1.704	1.849	1.997
WITHOUT	0.560	0.587	0.611	0.644	0.699	0.761	0.798	0.843	0.902	0.976	1.059	1.164	1.272	1.384	1.491	1.613	1.736	1.860
DIFF	0.000	0.001	0.002	0.004	0.006	0.009	0.012	0.016	0.019	0.024	0.031	0.040	0.050	0.061	0.075	0.091	0.113	0.138
%DIFF	0.081	0.216	0.382	0.665	0.923	1.247	1.553	1.843	2.106	2.487	2.959	3.434	3.893	4.426	4.997	5.674	6.499	7.405
Wholesale Price Index (79=1.000)																		
WITHBASE	0.467	0.483	0.504	0.571	0.678	0.741	0.776	0.823	0.888	1.000	1.141	1.290	1.451	1.624	1.775	1.949	2.147	2.347
WITHOUT	0.467	0.481	0.501	0.565	0.669	0.729	0.760	0.804	0.865	0.971	1.102	1.240	1.387	1.543	1.677	1.827	1.992	2.152
DIFF	0.000	0.001	0.003	0.005	0.009	0.013	0.015	0.019	0.023	0.029	0.039	0.050	0.063	0.080	0.098	0.122	0.156	0.195
%DIFF	0.106	0.303	0.549	0.951	1.381	1.718	2.028	2.342	2.619	3.010	3.548	4.060	4.571	5.202	5.854	6.690	7.810	9.044
Consumer Price Index (79=1.000)																		
WITHBASE	0.534	0.55[illegible]	0.575	0.611	0.678	0.740	0.783	0.834	0.898	1.000	1.134	1.265	1.394	1.527	1.654	1.796	1.949	2.107
WITHOUT	0.533	0.555	0.573	0.607	0.672	0.731	0.771	0.819	0.880	0.976	1.103	1.225	1.346	1.468	1.583	1.709	1.842	1.977
DIFF	0.000	0.001	0.002	0.004	0.006	0.009	0.012	0.015	0.019	0.024	0.031	0.040	0.048	0.058	0.071	0.087	0.107	0.130
%DIFF	0.073	0.196	0.357	0.634	0.939	1.264	1.559	1.841	2.112	2.421	2.818	3.261	3.540	3.980	4.494	5.115	5.825	6.580
Annual Rate of Change																		
WITHBASE	5.9	4.2	3.3	6.3	11.1	9.1	5.7	6.5	7.8	11.3	13.4	11.5	10.2	9.5	8.4	8.6	8.5	8.1
WITHOUT	5.8	4.1	3.2	6.0	10.7	8.8	5.4	6.2	7.5	11.0	13.0	11.0	9.9	9.0	7.8	7.9	7.8	7.4
DIFF	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.5	0.3	0.5	0.5	0.6	0.7	0.8
%DIFF	1.3	3.1	5.3	4.9	3.1	4.0	5.7	4.8	3.8	3.1	3.4	4.3	3.0	5.1	6.8	8.1	9.3	10.4
Investment																		
Real Business Fixed Investment (79$)																		
WITHBASE	195.5	192.6	207.9	237.2	233.1	204.7	215.2	241.1	263.5	280.4	270.5	262.9	276.8	291.4	305.8	323.9	339.5	349.9
WITHOUT	193.0	188.5	202.4	231.2	228.5	200.9	212.0	238.6	261.0	278.2	268.4	260.1	274.6	289.0	303.4	322.0	338.0	349.0
DIFF	2.5	4.1	5.5	6.0	4.6	3.9	3.2	2.5	2.5	2.2	2.1	2.9	2.3	2.3	2.4	1.9	1.6	0.9
%DIFF	1.3	2.2	2.7	2.6	2.0	1.9	1.5	1.0	1.0	0.8	0.8	1.1	0.8	0.8	0.8	0.6	0.5	0.3

Table 3 (Continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Producers' Durable Equipment																		
WITHBASE	111.9	111.0	123.1	145.3	147.5	129.7	137.6	160.0	174.3	183.8	175.2	171.0	179.9	190.0	199.4	211.3	222.1	229.9
WITHOUT	109.7	107.8	118.6	140.5	143.5	125.9	134.4	157.1	171.1	181.0	172.0	166.8	176.2	186.1	195.5	207.9	219.1	227.5
DIFF	2.2	3.3	4.5	4.8	4.0	3.9	3.2	2.9	3.2	2.9	3.3	4.2	3.7	3.9	3.9	3.4	3.1	2.5
%DIFF	2.0	3.0	3.8	3.4	2.8	3.1	2.4	1.8	1.9	1.6	1.9	2.5	2.1	2.1	2.0	1.7	1.4	1.1
Nonresidential Construction																		
WITHBASE	87.4	85.2	88.0	94.3	86.9	76.1	78.4	80.6	88.8	96.5	95.8	92.3	97.3	101.5	106.6	112.8	117.5	119.8
WITHOUT	87.3	84.5	87.2	93.3	86.5	76.4	78.8	81.3	89.9	97.6	97.4	94.2	99.3	103.7	108.7	114.8	119.5	121.8
DIFF	0.1	0.7	0.7	1.0	0.4	-0.3	-0.3	-0.7	-1.1	-1.1	-1.6	-2.0	-2.0	-2.1	-2.1	-2.1	-2.0	-2.0
%DIFF	0.1	0.8	0.8	1.0	0.4	-0.4	-0.4	-0.9	-1.2	-1.1	-1.7	-2.1	-2.0	-2.1	-2.0	-1.8	-1.7	-1.7
Housing Starts (mil. units)																		
WITHBASE	1.44	2.04	2.36	2.05	1.33	1.16	1.53	1.97	2.01	1.72	1.32	1.40	1.84	1.77	1.82	2.06	2.06	2.09
WITHOUT	1.44	2.05	2.39	2.08	1.37	1.19	1.59	2.05	2.10	1.80	1.38	1.47	1.93	1.88	1.96	2.19	2.17	2.21
DIFF	0.00	-0.01	-0.02	-0.03	-0.04	-0.03	-0.06	-0.08	-0.09	-0.08	-0.05	-0.07	-0.08	-0.11	-0.14	-0.13	-0.11	-0.11
%DIFF	-0.25	-0.66	-0.94	-1.67	-2.68	-2.87	-3.48	-4.14	-4.21	-4.34	-3.78	-4.66	-4.35	-5.62	-6.91	-5.97	-5.11	-5.19
Trade																		
Real Imports (79$)																		
WITHBASE	163.6	170.4	188.6	201.0	198.3	175.3	207.8	224.2	253.2	268.4	266.5	266.4	283.9	297.9	307.0	323.4	336.0	344.7
WITHOUT	162.7	168.7	186.4	198.7	196.7	174.5	208.1	224.9	254.0	269.3	266.9	267.0	285.9	300.6	310.8	327.5	339.8	348.4
DIFF	1.0	1.7	2.2	2.4	1.6	0.7	-0.3	-0.7	-0.8	-1.0	-0.4	-0.6	-2.0	-2.7	-3.8	-4.1	-3.8	-3.7
%DIFF	0.6	1.0	1.2	1.2	0.8	0.4	-0.1	-0.3	-0.3	-0.4	-0.2	-0.2	-0.7	-0.9	-1.2	-1.3	-1.1	-1.1
Real Exports (79$)																		
WITHBASE	135.3	136.2	148.7	186.7	208.2	198.7	211.3	217.2	244.7	281.8	309.9	308.8	323.1	338.1	348.5	356.3	360.1	371.7
WITHOUT	135.4	136.4	149.0	187.1	208.6	198.7	210.7	216.2	243.6	280.6	308.9	307.8	321.9	337.0	347.7	356.3	361.3	373.8
DIFF	0.0	-0.2	-0.3	-0.4	-0.4	0.1	0.6	1.0	1.1	1.3	1.0	1.0	1.2	1.2	0.8	0.0	-1.2	-2.0
%DIFF	0.0	-0.1	-0.2	-0.2	-0.2	0.0	0.3	0.5	0.5	0.4	0.3	0.3	0.4	0.3	0.2	0.0	-0.3	-0.5
Real Consumption (79$)																		
Motor Vehicles & Parts																		
WITHBASE	59.2	70.6	81.3	87.6	72.9	73.4	88.7	98.4	101.9	95.6	83.1	86.9	96.5	95.8	103.2	109.6	111.4	114.2
WITHOUT	59.1	70.3	81.1	87.8	73.5	74.8	90.5	100.6	104.7	98.7	86.8	91.9	102.0	101.6	109.5	116.2	118.0	121.2
DIFF	0.0	0.2	0.2	-0.2	-0.7	-1.4	-1.8	-2.2	-2.8	-3.1	-3.6	-4.9	-5.5	-5.9	-6.3	-6.6	-6.6	-7.0
%DIFF	0.1	0.4	0.2	-0.2	-0.9	-1.9	-2.0	-2.2	-2.7	-3.1	-4.2	-5.4	-5.4	-5.8	-5.8	-5.6	-5.6	-5.8
Other Durables																		
WITHBASE	70.2	72.6	80.9	89.4	90.1	89.8	95.4	103.3	111.3	117.0	112.8	114.6	119.0	123.6	131.1	139.0	143.3	148.3
WITHOUT	70.1	72.3	80.7	89.4	90.3	90.4	95.8	104.0	112.1	118.0	113.6	115.7	120.4	125.4	133.2	141.2	145.5	150.6
DIFF	0.1	0.3	0.2	0.0	-0.2	-0.6	-0.5	-0.7	-0.8	-0.9	-0.9	-1.1	-1.4	-1.7	-2.1	-2.2	-2.2	-2.3
%DIFF	0.2	0.4	0.3	0.0	-0.2	-0.6	-0.5	-0.7	-0.7	-0.8	-0.8	-0.9	-1.2	-1.4	-1.6	-1.6	-1.5	-1.5
Nondurables																		
WITHBASE	482.8	491.2	511.6	524.1	516.1	524.4	548.5	568.2	588.3	603.2	608.2	605.4	610.6	620.4	633.0	648.1	660.1	672.4
WITHOUT	481.6	489.1	508.6	520.4	512.9	521.7	546.1	566.0	586.5	601.7	607.2	604.8	610.6	621.2	634.7	650.5	663.1	676.5
DIFF	1.3	2.2	3.0	3.7	3.1	2.6	2.4	2.2	1.8	1.5	1.0	0.6	0.0	-0.8	-1.7	-2.4	-3.1	-4.1
%DIFF	0.3	0.4	0.6	0.7	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.1	0.0	-0.1	-0.3	-0.4	-0.5	-0.6
Services																		
WITHBASE	485.7	503.0	527.9	550.5	564.7	583.0	607.9	635.4	670.0	697.2	715.4	735.1	754.5	777.3	806.2	837.9	867.1	896.5
WITHOUT	484.7	501.4	526.0	548.3	563.0	581.7	606.7	634.5	669.7	697.3	716.3	736.5	756.6	780.2	809.6	842.1	871.7	901.9
DIFF	1.0	1.6	2.0	2.1	1.7	1.4	1.2	0.9	0.3	-0.1	-0.9	-1.4	-2.2	-2.9	-3.4	-4.1	-4.7	-5.3
%DIFF	0.2	0.3	0.4	0.4	0.3	0.2	0.2	0.1	0.0	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5	-0.6

Table 3 (Continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Incomes																		
Disposable Income																		
WITHBASE	695.3	751.8	810.4	914.9	999.0	1096.7	1195.1	1312.8	1464.8	1644.2	1824.9	2038.4	2303.8	2580.6	2888.4	3239.9	3599.4	3987.1
WITHOUT	694.0	748.6	805.5	907.2	988.3	1081.9	1175.2	1287.9	1433.6	1603.7	1772.8	1972.5	2220.6	2476.3	2760.0	3079.1	3398.2	3739.2
DIFF	1.3	3.1	4.9	7.7	10.7	14.9	19.9	24.9	31.1	40.5	52.1	65.9	83.3	104.3	128.4	160.7	201.2	247.9
%DIFF	0.2	0.4	0.6	0.8	1.1	1.4	1.7	1.9	2.2	2.5	2.9	3.3	3.7	4.2	4.7	5.2	5.9	6.6
Real Disposable Income (79$)																		
WITHBASE	1221.7	1266.8	1317.3	1406.9	1395.5	1423.4	1474.6	1527.6	1595.5	1643.9	1654.9	1672.2	1723.4	1766.6	1826.4	1894.4	1946.4	1998.8
WITHOUT	1220.3	1264.0	1314.0	1404.2	1394.6	1423.5	1474.8	1529.1	1597.7	1647.0	1659.7	1679.4	1731.3	1775.3	1837.3	1906.2	1958.8	2013.7
DIFF	1.4	2.8	3.3	2.6	0.9	-0.1	-0.2	-1.4	-2.1	-3.1	-4.8	-7.2	-7.9	-8.6	-10.9	-11.8	-12.4	-14.9
%DIFF	0.1	0.2	0.2	0.2	0.1	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6	-0.7
Before-tax Corporate Profits																		
WITHBASE	75.5	86.5	100.8	126.0	136.9	132.1	166.2	193.1	224.3	256.2	245.6	230.7	265.4	295.3	313.2	381.4	403.6	433.2
WITHOUT	74.5	84.8	98.8	123.4	135.2	130.6	164.4	191.1	222.5	252.2	240.4	226.1	259.4	286.6	301.9	372.0	377.6	400.4
DIFF	1.0	1.7	2.0	2.5	1.7	1.5	1.7	2.0	1.8	4.0	5.3	4.7	6.0	8.7	11.7	19.4	26.0	32.8
%DIFF	1.3	2.0	2.0	2.1	1.3	1.1	1.1	1.0	0.8	1.6	2.2	2.1	2.3	3.0	3.9	5.2	6.9	8.2
Aftertax Corporate Profits																		
WITHBASE	41.3	49.0	59.1	76.8	85.3	81.5	102.4	120.3	140.9	168.3	164.3	152.1	173.3	193.2	206.0	254.4	264.8	285.1
WITHOUT	40.7	48.0	57.8	75.1	84.0	80.3	101.0	118.7	139.3	165.2	160.3	148.3	168.6	186.6	197.3	240.9	247.0	262.9
DIFF	0.5	1.0	1.2	1.7	1.2	1.2	1.4	1.6	1.6	3.1	4.0	3.8	4.7	6.6	8.7	13.5	17.8	22.2
%DIFF	1.3	2.1	2.2	2.2	1.4	1.5	1.4	1.3	1.2	1.9	2.5	2.6	2.8	3.5	4.4	5.6	7.2	8.5
Real Aftertax Profits (79$)																		
WITHBASE	76.5	86.7	100.6	125.2	125.5	105.8	127.1	140.8	153.0	168.3	150.7	128.5	133.5	136.4	134.3	152.7	146.9	146.7
WITHOUT	75.6	85.1	99.0	123.5	125.1	105.7	127.6	141.8	154.8	169.7	151.8	129.9	135.3	138.1	135.7	153.7	147.0	146.6
DIFF	1.0	1.5	1.7	1.7	0.4	0.1	-0.5	-1.0	-1.8	-1.4	1.0	-1.4	-1.9	-1.7	-1.4	-1.0	-0.1	0.1
%DIFF	1.3	1.8	1.7	1.4	0.3	0.1	-0.4	-0.7	-1.1	-0.8	-0.7	-1.1	-1.4	-1.2	-1.0	-0.7	-0.1	0.1
Other Indicators																		
State & Local Gov't Bond Rate (%)																		
WITHBASE	6.12	5.22	5.04	5.00	5.90	6.43	5.66	5.20	5.52	5.93	7.86	8.76	9.00	8.42	8.08	8.42	8.36	8.08
WITHOUT	6.10	5.16	4.95	4.86	5.71	6.21	5.44	4.97	5.27	5.64	7.51	8.39	8.60	7.99	7.63	7.95	7.86	7.54
DIFF	0.02	0.05	0.09	0.14	0.19	0.21	0.23	0.24	0.26	0.29	0.34	0.37	0.40	0.43	0.45	0.47	0.51	0.54
%DIFF	0.32	1.06	1.81	2.79	3.39	3.46	4.17	4.79	4.92	5.22	4.57	4.40	4.70	5.39	5.83	5.90	6.43	7.22
Unemployment Rate (%)																		
WITHBASE	5.0	6.0	5.6	4.8	5.6	8.5	7.7	7.0	6.0	5.8	7.2	7.8	7.1	7.0	7.0	6.5	6.3	6.2
WITHOUT	5.1	6.1	5.8	5.1	5.8	8.7	7.9	7.3	6.2	6.0	7.5	8.1	7.4	7.4	7.4	6.9	6.7	6.7
DIFF	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4
%DIFF	-1.9	-3.1	-4.0	-4.6	-3.6	-2.2	-2.7	-3.2	-3.6	-4.2	-3.8	-3.7	-4.1	-4.4	-4.6	-5.3	-5.9	-6.2
Industrial Production Index (79=1.000)																		
WITHBASE	0.707	0.718	0.785	0.851	0.848	0.772	0.854	0.906	0.959	1.000	0.963	0.977	1.059	1.105	1.153	1.229	1.258	1.292
WITHOUT	0.705	0.715	0.783	0.849	0.849	0.775	0.857	0.910	0.966	1.006	0.970	0.987	1.070	1.117	1.169	1.246	1.274	1.310
DIFF	0.001	0.003	0.003	0.002	-0.001	-0.003	-0.003	-0.005	-0.007	-0.006	-0.007	-0.010	-0.012	-0.013	-0.015	-0.016	-0.016	-0.018
%DIFF	0.200	0.438	0.340	0.216	-0.092	-0.391	-0.393	-0.495	-0.707	-0.639	-0.734	-0.991	-1.083	-1.150	-1.308	-1.298	-1.260	-1.385

Table 5
Assumptions in the High and Low Pollution Control Cost Alternatives
(Millions of 1979 dollars)

HIGH COST CASE

	STATE AND LOCAL		MOBILE SOURCE CONTROLS					
	INCREMENTAL INVESTMENT	DIFFERENCE FROM WITH CASE	INCREMENTAL INVESTMENT	DIFFERENCE FROM WITH CASE	OPERATING AND MAINTENANCE COSTS	DIFFERENCE FROM WITH CASE	TOTAL DIFFERENCE FROM WITH CASE	PERCENT OF WITH CASE
1979	3459	628	3686	---	5307	---	628	2.3
1980	3728	890	5230	---	5195	---	890	2.9
1981	3391	861	7208	---	5310	---	861	2.5
1982	2853	829	6865	---	5220	---	829	2.3
1983	2206	245	7183	100	5245	500	845	2.2
1984	1802	462	7415	200	5386	500	1162	2.9
1985	1992	740	7552	300	5602	1000	2040	4.9
1986	2078	918	7601	300	5807	1500	2718	6.3
1987	1903	859	7658	300	5789	1500	2659	5.9

LOW COST CASE

	TOTAL INCREMENTAL COSTS	PERCENT OF WITH CASE
1981	31615	90
1982	28870	80
1983	26937	70
1984	24334	60
1985	20992	50
1986	17365	40
1987	13443	30

Table 4
Incremental Pollution Control Costs
Used In Each Simulation
(Millions of 1979 dollars)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
BASE CASE:																		
Incremental Investment	3375	5086	6558	7524	8418	10308	11745	11633	13036	13536	15641	19192	18787	20153	20416	20359	20319	19979
Incremental O&M	3023	4395	6236	8622	9531	9965	10544	11375	12299	13579	14605	15936	17300	18329	20140	21625	23093	24830
HIGH COST:																		
Incremental Investment	3375	5086	6558	7524	8418	10308	11745	11633	13036	14164	16531	20053	19616	20498	21078	21399	21537	21138
Incremental O&M	3023	4395	6236	8622	9531	9965	10544	11375	12299	13579	14605	15936	17300	18829	20640	22625	24593	26330
LOW COST:																		
Incremental Investment	3375	5086	6558	7524	8418	10308	11745	11633	13036	13536	15641	17273	15030	14107	12250	10180	8128	5994
Incremental O&M	3023	4395	6236	8622	9531	9965	10544	11375	12299	13579	14605	14342	13840	12830	12084	10812	9237	7449
CONSTANT MONEY SUPPLY:																		
Incremental Investment										Same as Base Case								
Incremental O&M										Same as Base Case								
WITHOUT:																		
Incremental Investment										-0-								
Incremental O&M										-0-								

Table 6
Assumptions in the Constant Money Supply Case

	DESIRED REDUCTION IN MONEY SUPPLY (BILLIONS)	REQUIRED DECREASE IN NONBORROWED RESERVES (IN BILLIONS)
1970	0.2	0.00
1971	0.4	0.06
1972	0.6	0.12
1973	0.8	0.09
1974	0.9	0.23
1975	1.2	0.13
1976	1.4	0.17
1977	1.7	0.20
1978	2.0	0.26
1979	2.6	0.42
1980	3.1	0.30
1981	3.8	0.57
1982	4.6	0.51
1983	5.7	0.56
1984	7.2	0.62
1985	9.1	0.67
1986	11.5	0.78
1987	14.3	0.78

Table 7
Estimated Impact of Incremental
Pollution Control Costs, 1970-1987
Higher Pollution Control Costs

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Gross National Product																		
WITHBASE	992.8	1077.6	1186.3	1327.2	1435.3	1549.9	1718.7	1920.2	2159.6	2417.9	2632.7	2924.7	3318.0	3732.5	4180.7	4737.2	5268.7	5847.0
WITHHIGH	992.8	1077.6	1186.3	1327.2	1435.3	1549.9	1718.7	1920.2	2159.6	2418.3	2633.7	2926.1	3319.7	3734.7	4184.3	4743.9	5279.8	5862.1
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	-1.0	-1.4	-1.7	-2.2	-3.6	-6.8	-11.2	-15.1
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3
Real GNP (79$)																		
WITHBASE	1770.5	1830.6	1934.8	2047.2	2034.8	2011.9	2119.9	2237.3	2344.5	2417.9	2414.6	2428.6	2510.3	2582.5	2669.9	2780.0	2849.4	2927.3
WITHHIGH	1770.5	1830.6	1934.8	2047.2	2034.8	2011.9	2119.9	2237.3	2344.5	2418.3	2415.3	2429.5	2511.2	2583.3	2671.0	2782.1	2852.4	2930.5
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	-0.8	-0.9	-0.9	-0.8	-1.2	-2.1	-3.0	-3.2
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
Annual Rate of Change																		
WITHBASE	-0.2	3.4	5.7	5.8	-0.6	-1.1	5.4	5.5	4.8	3.1	-0.1	0.6	3.4	2.9	3.4	4.1	2.5	2.7
WITHHIGH	-0.2	3.4	5.7	5.8	-0.6	-1.1	5.4	5.5	4.8	3.1	-0.1	0.6	3.4	2.9	3.4	4.2	2.5	2.7
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	13.7	-0.7	0.1	0.0	-0.4	-0.8	-1.3	-0.1
Prices																		
Implicit Price Deflator (79=1.000)																		
WITHBASE	0.561	0.589	0.613	0.648	0.705	0.770	0.811	0.858	0.921	1.000	1.090	1.204	1.322	1.445	1.566	1.704	1.849	1.997
WITHHIGH	0.561	0.589	0.613	0.648	0.705	0.770	0.811	0.858	0.921	1.000	1.090	1.204	1.322	1.446	1.567	1.705	1.851	2.000
DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.002	-0.003
%DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.003	-0.008	-0.012	-0.017	-0.025	-0.041	-0.068	-0.105	-0.150
Wholesale Price Index (79=1.000)																		
WITHBASE	0.467	0.483	0.504	0.571	0.678	0.741	0.776	0.823	0.888	1.000	1.141	1.290	1.451	1.624	1.775	1.949	2.147	2.347
WITHHIGH	0.467	0.483	0.504	0.571	0.678	0.741	0.776	0.823	0.888	1.000	1.141	1.290	1.451	1.624	1.775	1.951	2.150	2.352
DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	-0.002	-0.003	-0.005
%DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.003	-0.007	-0.012	-0.018	-0.027	-0.046	-0.080	-0.135	-0.198
Consumer Price Index (79=1.000)																		
WITHBASE	0.534	0.556	0.575	0.611	0.678	0.740	0.783	0.834	0.898	1.000	1.134	1.265	1.394	1.527	1.654	1.796	1.949	2.107
WITHHIGH	0.534	0.556	0.575	0.611	0.678	0.740	0.783	0.834	0.898	1.000	1.135	1.265	1.394	1.527	1.655	1.797	1.951	2.110
DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.002	-0.003
%DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.002	-0.008	-0.014	-0.020	-0.029	-0.042	-0.063	-0.094	-0.136
Annual Rate of Change																		
WITHBASE	5.9	4.2	3.3	6.3	11.1	9.1	5.7	6.5	7.8	11.3	13.4	11.5	10.2	9.5	8.4	8.6	8.5	8.1
WITHHIGH	5.9	4.2	3.3	6.3	11.1	9.1	5.7	6.5	7.8	11.3	13.5	11.5	10.2	9.5	8.4	8.6	8.6	8.2
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.6
Investment																		
Real Business Fixed Investment (79$)																		
WITHBASE	195.5	192.6	207.9	237.2	233.1	204.7	215.2	241.1	263.5	280.4	270.5	262.9	276.8	291.4	305.8	323.9	339.5	349.9
WITHHIGH	195.5	192.6	207.9	237.2	233.1	204.7	215.2	241.1	263.5	280.4	270.5	263.0	276.9	291.5	306.0	324.3	340.1	350.5
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.4	-0.5	-0.6
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2

Table 7 (Continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Producers' Durable Equipment																		
WITHBASE	111.9	111.0	123.1	145.3	147.5	129.7	137.6	160.0	174.3	183.8	175.2	171.0	179.9	190.0	199.4	211.3	222.1	229.9
WITHHIGH	111.9	111.0	123.1	145.3	147.5	129.7	137.6	160.0	174.3	183.9	175.3	171.1	180.0	190.2	199.6	211.6	222.6	230.4
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2
Nonresidential Construction																		
WITHBASE	87.4	85.2	88.0	94.3	86.9	76.1	78.4	80.6	88.8	96.5	95.8	92.3	97.3	101.5	106.6	112.8	117.5	119.8
WITHHIGH	87.4	85.2	88.0	94.3	86.9	76.1	78.4	80.6	88.8	96.5	95.8	92.3	97.3	101.5	106.6	112.8	117.6	119.9
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
Housing Starts (mil. units)																		
WITHBASE	1.44	2.04	2.36	2.05	1.33	1.16	1.53	1.97	2.01	1.72	1.32	1.40	1.84	1.77	1.82	2.06	2.06	2.09
WITHHIGH	1.44	2.04	2.36	2.05	1.33	1.16	1.53	1.97	2.01	1.72	1.32	1.40	1.84	1.77	1.82	2.06	2.06	2.09
DIFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
%DIFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.09	0.14	0.14	0.13	0.09	0.13	0.19	0.24
Trade																		
Real Imports (79$)																		
WITHBASE	163.6	170.4	188.6	201.0	198.3	175.3	207.8	224.2	253.2	268.4	266.5	266.4	283.9	297.9	307.0	323.4	336.0	344.7
WITHHIGH	163.6	170.4	188.6	201.0	198.3	175.3	207.8	224.2	253.2	268.4	266.6	266.5	284.0	298.1	307.2	323.6	336.3	344.9
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
Real Exports (79$)																		
WITHBASE	135.3	136.2	148.7	186.7	208.2	198.7	211.3	217.2	244.7	281.8	309.9	308.8	323.1	338.1	348.5	356.3	360.1	371.7
WITHHIGH	135.3	136.2	148.7	186.7	208.2	198.7	211.3	217.2	244.7	281.8	309.9	308.8	323.2	338.2	348.6	356.4	360.2	372.0
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Real Consumption (79$)																		
Motor Vehicles & Parts																		
WITHBASE	59.2	70.6	81.3	87.6	72.9	73.4	88.7	98.4	101.9	95.6	83.1	86.9	96.5	95.8	103.2	109.6	111.4	114.2
WITHHIGH	59.2	70.6	81.3	87.6	72.9	73.4	88.7	98.4	101.9	95.6	83.2	87.0	96.5	95.8	103.2	109.6	111.4	114.2
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Durables																		
WITHBASE	70.2	72.6	80.9	89.4	90.1	89.8	95.4	103.3	111.3	117.0	112.8	114.6	119.0	123.6	131.1	139.0	143.3	148.3
WITHHIGH	70.2	72.6	80.9	89.4	90.1	89.8	95.4	103.3	111.3	117.1	112.8	114.6	119.1	123.7	131.1	139.0	143.4	148.4
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
Nondurables																		
WITHBASE	482.8	491.2	511.6	524.1	516.1	524.4	548.5	568.2	588.3	603.2	608.2	605.4	610.6	620.4	633.0	648.1	660.1	672.4
WITHHIGH	482.8	491.2	511.6	524.1	516.1	524.4	548.5	568.2	588.3	603.2	608.3	605.5	610.7	620.7	633.3	648.7	661.0	673.3
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.3	-0.3	-0.6	-0.9
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
Services																		
WITHBASE	485.7	503.0	527.9	550.5	564.7	583.0	607.9	635.4	670.0	697.2	715.4	735.1	754.5	777.3	806.2	837.9	867.1	896.5
WITHHIGH	485.7	503.0	527.9	550.5	564.7	583.0	607.9	635.4	670.0	697.2	715.5	735.1	754.6	777.6	806.5	838.5	867.9	897.4
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.3	-0.3	-0.6	-0.9	-0.9
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1

Table 7 (Continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Incomes																		
Disposable Income																		
WITHBASE	695.3	751.8	810.4	914.9	999.0	1096.7	1195.1	1312.8	1464.8	1644.2	1824.9	2038.4	2303.8	2580.6	2888.4	3239.9	3599.4	3987.1
WITHHIGH	695.3	751.8	810.4	914.9	999.0	1096.7	1195.1	1312.8	1464.8	1644.4	1825.5	2039.2	2304.9	2581.9	2890.5	3243.9	3606.0	3996.4
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.6	-0.8	-1.0	-1.3	-2.2	-4.0	-6.7	-9.3
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2
Real Disposable Income (79$)																		
WITHBASE	1221.7	1266.8	1317.3	1406.9	1395.5	1423.4	1474.6	1527.6	1595.5	1643.9	1654.9	1672.2	1723.4	1766.6	1826.4	1894.4	1946.4	1998.8
WITHHIGH	1221.7	1266.8	1317.3	1406.9	1395.5	1423.4	1474.6	1527.6	1595.5	1644.1	1655.3	1672.6	1723.9	1766.7	1826.6	1894.8	1947.0	1999.5
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.4	-0.4	-0.5	-0.1	-0.2	-0.4	-0.6	-0.7
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Before-tax Corporate Profits																		
WITHBASE	75.5	86.5	100.8	126.0	136.9	132.1	166.2	193.1	224.3	256.2	245.6	230.7	265.4	295.3	313.2	391.4	403.6	433.2
WITHHIGH	75.5	86.5	100.8	126.0	136.9	132.1	166.2	193.1	224.3	256.3	245.8	230.9	265.5	295.7	313.9	392.7	405.6	435.4
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.1	-0.3	-0.6	-1.3	-2.0	-2.2
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	-0.2	-0.3	-0.5	-0.5
Aftertax Corporate Profits																		
WITHBASE	41.3	49.0	59.1	76.8	85.3	81.5	102.4	120.3	140.9	168.3	164.3	152.1	173.3	193.2	206.0	254.4	264.8	285.1
WITHHIGH	41.3	49.0	59.1	76.8	85.3	81.5	102.4	120.3	140.9	168.4	164.4	152.2	173.4	193.4	206.4	255.2	266.0	286.5
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.4	-0.8	-1.2	-1.4
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	-0.2	-0.3	-0.5	-0.5
Real Aftertax Profits (79$)																		
WITHBASE	76.5	86.7	100.6	125.2	125.5	105.8	127.1	140.8	153.0	168.3	150.7	128.5	133.5	136.4	134.3	152.7	146.9	146.7
WITHHIGH	76.5	86.7	100.6	125.2	125.5	105.8	127.1	140.8	153.0	168.4	150.8	128.5	133.5	136.5	134.5	153.0	147.4	147.1
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	-0.2	-0.4	-0.5	-0.4
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	-0.1	-0.2	-0.3	-0.3
Other Indicators																		
State & Local Gov't Bond Rate (%)																		
WITHBASE	6.12	5.22	5.04	5.00	5.90	6.43	5.66	5.20	5.52	5.93	7.86	8.76	9.00	8.42	8.08	8.42	8.36	8.08
WITHHIGH	6.12	5.22	5.04	5.00	5.90	6.43	5.66	5.20	5.52	5.93	7.86	8.77	9.01	8.43	8.09	8.43	8.38	8.11
DIFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.03
%DIFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.06	-0.09	-0.10	-0.10	-0.12	-0.16	-0.25	-0.33
Unemployment Rate (%)																		
WITHBASE	5.0	6.0	5.6	4.8	5.6	8.5	7.7	7.0	6.0	5.8	7.2	7.8	7.1	7.0	7.0	6.5	6.3	6.2
WITHHIGH	5.0	6.0	5.6	4.8	5.6	8.5	7.7	7.0	6.0	5.8	7.2	7.8	7.1	7.0	7.0	6.5	6.3	6.2
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.5
Industrial Production Index (79=1.000)																		
WITHBASE	0.707	0.718	0.785	0.851	0.848	0.772	0.854	0.906	0.959	1.000	0.963	0.977	1.059	1.105	1.153	1.229	1.258	1.292
WITHHIGH	0.707	0.718	0.785	0.851	0.848	0.772	0.854	0.906	0.959	1.000	0.963	0.978	1.059	1.105	1.154	1.230	1.259	1.293
DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001
%DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.011	-0.025	-0.024	-0.017	-0.024	-0.043	-0.073	-0.107	-0.104

Table 8
Estimated Impact of Incremental Control Costs, 1970-1987
Lower Pollution Control Costs

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Gross National Product																		
WITHBASE	992.8	1077.6	1186.3	1327.2	1435.3	1549.9	1718.7	1920.2	2159.6	2417.9	2632.7	2924.7	3318.0	3732.5	4180.7	4737.2	5268.7	5847.0
WITHLOW	992.8	1077.6	1186.3	1327.2	1435.3	1549.9	1718.7	1920.2	2159.6	2417.9	2632.7	2922.6	3312.0	3721.9	4164.9	4714.7	5235.4	5799.9
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	6.0	10.7	15.8	22.5	33.3	47.1
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.8
Real GNP (79$)																		
WITHBASE	1770.5	1830.6	1934.8	2047.2	2034.8	2011.9	2119.9	2237.3	2344.5	2417.9	2414.6	2428.6	2510.3	2582.5	2669.9	2780.0	2849.4	2927.3
WITHLOW	1770.5	1830.6	1934.8	2047.2	2034.8	2011.9	2119.9	2237.3	2344.5	2417.9	2414.6	2427.5	2508.1	2580.3	2668.4	2779.4	2849.3	2928.9
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.2	2.2	1.5	0.6	0.1	-1.6
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	-0.1
Annual Rate of Change																		
WITHBASE	-0.2	3.4	5.7	5.8	-0.6	-1.1	5.4	5.5	4.8	3.1	-0.1	0.6	3.4	2.9	3.4	4.1	2.5	2.7
WITHLOW	-0.2	3.4	5.7	5.8	-0.6	-1.1	5.4	5.5	4.8	3.1	-0.1	0.5	3.3	2.9	3.4	4.2	2.5	2.8
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	1.4	0.0	-0.9	-0.9	-0.7	-2.1
Prices																		
Implicit Price Deflator (79=1.000)																		
WITHBASE	0.561	0.589	0.613	0.648	0.705	0.770	0.811	0.858	0.921	1.000	1.090	1.204	1.322	1.445	1.566	1.704	1.849	1.997
WITHLOW	0.561	0.589	0.613	0.648	0.705	0.770	0.811	0.858	0.921	1.000	1.090	1.204	1.321	1.442	1.561	1.696	1.837	1.980
DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.003	0.005	0.008	0.012	0.017
%DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.094	0.200	0.324	0.456	0.633	0.866
Wholesale Price Index (79=1.000)																		
WITHBASE	0.467	0.483	0.504	0.571	0.678	0.741	0.776	0.823	0.888	1.000	1.141	1.290	1.451	1.624	1.775	1.949	2.147	2.347
WITHLOW	0.467	0.483	0.504	0.571	0.678	0.741	0.776	0.823	0.888	1.000	1.141	1.289	1.448	1.618	1.765	1.936	2.128	2.318
DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.006	0.009	0.014	0.020	0.029
%DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.049	0.164	0.345	0.529	0.699	0.925	1.248
Consumer Price Index (79=1.000)																		
WITHBASE	0.534	0.556	0.575	0.611	0.678	0.740	0.783	0.834	0.898	1.000	1.134	1.265	1.394	1.527	1.654	1.796	1.949	2.107
WITHLOW	0.534	0.556	0.575	0.611	0.678	0.740	0.783	0.834	0.898	1.000	1.134	1.264	1.393	1.523	1.648	1.787	1.936	2.088
DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.003	0.006	0.009	0.014	0.019
%DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.037	0.108	0.225	0.358	0.510	0.698	0.926
Annual Rate of Change																		
WITHBASE	5.9	4.2	3.3	6.3	11.1	9.1	5.7	6.5	7.8	11.3	13.4	11.5	10.2	9.5	8.4	8.6	8.5	8.1
WITHLOW	5.9	4.2	3.3	6.3	11.1	9.1	5.7	6.5	7.8	11.3	13.4	11.4	10.2	9.4	8.2	8.4	8.3	7.9
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	1.4	1.7	2.0	2.4	3.1
Investment																		
Real Business Fixed Investment (79$)																		
WITHBASE	195.5	192.6	207.9	237.2	233.1	204.7	215.2	241.1	263.5	280.4	270.5	262.9	276.8	291.4	305.8	323.9	339.5	349.9
WITHLOW	195.5	192.6	207.9	237.2	233.1	204.7	215.2	241.1	263.5	280.4	270.5	262.0	274.6	288.1	301.7	319.3	334.4	344.3
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.2	3.3	4.1	4.6	5.2	5.6
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	1.1	1.4	1.4	1.6	1.6

Table 8 (Continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Producers' Durable Equipment																		
WITHBASE	111.9	111.0	123.1	145.3	147.5	129.7	137.6	160.0	174.3	183.8	175.2	171.0	179.9	190.0	199.4	211.3	222.1	229.9
WITHLOW	111.9	111.0	123.1	145.3	147.5	129.7	137.6	160.0	174.3	183.8	175.2	170.2	178.0	187.1	195.6	206.9	217.0	224.2
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.0	3.0	3.9	4.5	5.2	5.7
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.1	1.6	2.0	2.2	2.4	2.5
Nonresidential Construction																		
WITHBASE	87.4	85.2	88.0	94.3	86.9	76.1	78.4	80.6	88.8	96.5	95.8	92.3	97.3	101.5	106.6	112.8	117.5	119.8
WITHLOW	87.4	85.2	88.0	94.3	86.9	76.1	78.4	80.6	88.8	96.5	95.8	92.2	97.1	101.4	106.6	112.9	117.9	120.4
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	-0.2	-0.4	-0.6
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	-0.2	-0.3	-0.5
Housing Starts (mil. units)																		
WITHBASE	1.44	2.04	2.36	2.05	1.33	1.16	1.53	1.97	2.01	1.72	1.32	1.40	1.84	1.77	1.82	2.06	2.06	2.09
WITHLOW	1.44	2.04	2.36	2.05	1.33	1.16	1.53	1.97	2.01	1.72	1.32	1.40	1.85	1.80	1.87	2.13	2.14	2.18
DIFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.03	-0.05	-0.07	-0.08	-0.09
%DIFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.22	-0.65	-1.49	-2.74	-3.35	-3.65	-4.14
Trade																		
Real Imports (79$)																		
WITHBASE	163.6	170.4	188.6	201.0	198.3	175.3	207.8	224.2	253.2	268.4	266.5	266.4	283.9	297.9	307.0	323.4	336.0	344.7
WITHLOW	163.6	170.4	188.6	201.0	198.3	175.3	207.8	224.2	253.2	268.4	266.5	265.9	282.9	296.8	306.2	323.1	335.9	344.6
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0	1.2	0.8	0.3	0.1	0.0
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.4	0.3	0.1	0.0	0.0
Real Exports (79$)																		
WITHBASE	135.3	136.2	148.7	186.7	208.2	198.7	211.3	217.2	244.7	281.8	309.9	308.8	323.1	338.1	348.5	356.3	360.1	371.7
WITHLOW	135.3	136.2	148.7	186.7	208.2	198.7	211.3	217.2	244.7	281.8	309.9	308.9	323.1	338.0	348.2	355.5	358.8	370.1
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.8	1.3	1.7
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4
Real Consumption (79$)																		
Motor Vehicles & Parts																		
WITHBASE	59.2	70.6	81.3	87.6	72.9	73.4	88.7	98.4	101.9	95.6	83.1	86.9	96.5	95.8	103.2	109.6	111.4	114.2
WITHLOW	59.2	70.6	81.3	87.6	72.9	73.4	88.7	98.4	101.9	95.6	83.1	87.1	96.8	96.5	104.4	111.3	113.4	116.7
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.7	-1.2	-1.6	-2.0	-2.6
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.3	-0.7	-1.1	-1.5	-1.8	-2.2
Other Durables																		
WITHBASE	70.2	72.6	80.9	89.4	90.1	89.8	95.4	103.3	111.3	117.0	112.8	114.6	119.0	123.6	131.1	139.0	143.3	148.3
WITHLOW	70.2	72.6	80.9	89.4	90.1	89.8	95.4	103.3	111.3	117.0	112.8	114.6	119.1	123.9	131.6	139.9	144.7	150.3
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.6	-1.0	-1.4	-2.0
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.4	-0.7	-1.0	-1.3
Nondurables																		
WITHBASE	482.8	491.2	511.6	524.1	516.1	524.4	548.5	568.2	588.3	603.2	608.2	605.4	610.6	620.4	633.0	648.1	660.1	672.4
WITHLOW	482.8	491.2	511.6	524.1	516.1	524.4	548.5	568.2	588.3	603.2	608.2	605.1	610.0	619.6	632.2	647.3	659.3	671.7
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.7	0.8	0.8	0.8	0.7
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Services																		
WITHBASE	485.7	503.0	527.9	550.5	564.7	583.0	607.9	635.4	670.0	697.2	715.4	735.1	754.5	777.3	806.2	837.9	867.1	896.5
WITHLOW	485.7	503.0	527.9	550.5	564.7	583.0	607.9	635.4	670.0	697.2	715.4	734.9	754.0	776.9	805.8	837.8	867.3	897.3
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.4	0.4	0.1	-0.3	-0.7
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	-0.1

Table 8 (Continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Incomes																		
Disposable Income																		
WITHBASE	695.3	751.8	810.4	914.9	999.0	1096.7	1195.1	1312.8	1464.8	1644.2	1824.9	2038.4	2303.8	2580.6	2888.4	3239.9	3599.4	3987.1
WITHLOW	695.3	751.8	810.4	914.9	999.0	1096.7	1195.1	1312.8	1464.8	1644.2	1824.9	2037.4	2300.4	2573.6	2876.9	3222.7	3574.2	3951.4
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.4	7.0	11.5	17.2	25.1	35.7
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.5	0.7	0.9
Real Disposable Income (79$)																		
WITHBASE	1221.7	1266.8	1317.3	1406.9	1395.5	1423.4	1474.6	1527.6	1595.5	1643.9	1654.9	1672.2	1723.4	1766.6	1826.4	1894.4	1946.4	1998.8
WITHLOW	1221.7	1266.8	1317.3	1406.9	1395.5	1423.4	1474.6	1527.6	1595.5	1643.9	1654.9	1672.3	1723.5	1767.1	1827.8	1896.8	1949.8	2003.5
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.5	-1.4	-2.4	-3.4	-4.7
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2
Before-tax Corporate Profits																		
WITHBASE	75.5	86.5	100.8	126.0	136.9	132.1	166.2	193.1	224.3	256.2	245.6	230.7	265.4	295.3	313.2	391.4	403.6	433.2
WITHLOW	75.5	86.5	100.8	126.0	136.9	132.1	166.2	193.1	224.3	256.2	245.6	230.2	264.3	294.7	313.9	393.6	405.7	435.8
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.1	0.6	-0.7	-2.2	-2.1	-2.6
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.2	-0.2	-0.5	-0.5	-0.6
Aftertax Corporate Profits																		
WITHBASE	41.3	49.0	59.1	76.8	85.3	81.5	102.4	120.3	140.9	168.3	164.3	152.1	173.3	193.2	206.0	254.4	264.8	285.1
WITHLOW	41.3	49.0	59.1	76.8	85.3	81.5	102.4	120.3	140.9	168.3	164.3	151.7	172.4	192.4	205.8	254.9	265.0	285.3
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	0.8	0.2	-0.5	-0.2	-0.2
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.1	-0.2	-0.1	-0.1
Real Aftertax Profits (79$)																		
WITHBASE	76.5	86.7	100.6	125.2	125.5	105.8	127.1	140.8	153.0	168.3	150.7	128.5	133.5	136.4	134.3	152.7	146.9	146.7
WITHLOW	76.5	86.7	100.6	125.2	125.5	105.8	127.1	140.8	153.0	168.3	150.7	128.2	132.9	136.1	134.6	153.6	147.9	148.1
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.3	-0.3	-1.0	-1.0	-1.4
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.2	-0.2	-0.6	-0.7	-0.9
Other Indicators																		
State & Local Gov't Bond Rate (%)																		
WITHBASE	6.12	5.22	5.04	5.00	5.90	6.43	5.66	5.20	5.52	5.93	7.86	8.76	9.00	8.42	8.08	8.42	8.36	8.08
WITHLOW	6.12	5.22	5.04	5.00	5.90	6.43	5.66	5.20	5.52	5.93	7.86	8.75	8.95	8.34	7.96	8.27	8.19	7.87
DIFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.09	0.12	0.15	0.18	0.21
%DIFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.51	1.03	1.48	1.76	2.16	2.68
Unemployment Rate (%)																		
WITHBASE	5.0	6.0	5.6	4.8	5.6	8.5	7.7	7.0	6.0	5.8	7.2	7.8	7.1	7.0	7.0	6.5	6.3	6.2
WITHLOW	5.0	6.0	5.6	4.8	5.6	8.5	7.7	7.0	6.0	5.8	7.2	7.8	7.2	7.2	7.2	6.7	6.5	6.5
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	-1.2	-1.7	-2.1	-2.7	-3.4	-4.1
Industrial Production Index (79=1.000)																		
WITHBASE	0.707	0.718	0.785	0.851	0.848	0.772	0.854	0.906	0.959	1.000	0.963	0.977	1.059	1.105	1.153	1.229	1.258	1.292
WITHLOW	0.707	0.718	0.785	0.851	0.848	0.772	0.854	0.906	0.959	1.000	0.963	0.977	1.058	1.105	1.155	1.233	1.262	1.298
DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	-0.002	-0.004	-0.004	-0.006
%DIFF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.036	0.061	-0.021	-0.177	-0.298	-0.346	-0.444

Table 9
Estimated Impact of Incremental Pollution Control Costs, 1970-1987
Constant Money Supply

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Gross National Product																		
WITHBASE	992.8	1077.6	1186.3	1327.2	1435.3	1549.9	1718.7	1920.2	2159.6	2417.9	2632.7	2924.7	3318.0	3732.5	4180.7	4737.2	5268.7	5847.0
OFFSET	992.8	1076.6	1184.3	1323.9	1430.8	1544.7	1712.0	1911.5	2148.9	2401.3	2612.1	2897.9	3278.2	3679.6	4113.0	4653.6	5167.3	5722.3
DIFF	0.0	1.0	2.0	3.3	4.4	5.2	6.7	8.6	10.7	16.6	20.6	26.8	39.8	53.0	67.7	83.5	101.3	124.7
%DIFF	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.7	0.8	0.9	1.2	1.4	1.6	1.8	2.0	2.2
Real GNP (79$)																		
WITHBASE	1770.5	1830.6	1934.8	2047.2	2034.8	2011.9	2119.9	2237.3	2344.5	2417.9	2414.6	2428.6	2510.3	2582.5	2669.9	2780.0	2849.4	2927.3
OFFSET	1770.5	1829.3	1932.8	2045.2	2033.4	2011.2	2118.9	2236.0	2343.0	2414.4	2411.2	2424.3	2502.7	2573.6	2660.6	2771.9	2841.2	2918.0
DIFF	0.0	1.3	2.0	2.0	1.4	0.7	0.9	1.4	1.5	3.4	3.4	4.3	7.6	8.9	9.3	8.0	8.2	9.3
%DIFF	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Annual Rate of Change																		
WITHBASE	-0.2	3.4	5.7	5.8	-0.6	-1.1	5.4	5.5	4.8	3.1	-0.1	0.6	3.4	2.9	3.4	4.1	2.5	2.7
OFFSET	-0.2	3.3	5.7	5.8	-0.6	-1.1	5.4	5.5	4.8	3.0	-0.1	0.5	3.2	2.8	3.4	4.2	2.5	2.7
DIFF	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	-0.1	0.0	0.0
%DIFF	0.0	2.2	0.6	-0.1	5.2	2.8	0.1	0.3	0.1	2.6	0.4	6.8	4.0	1.5	0.2	-1.5	-0.1	1.1
Prices																		
Implicit Price Deflator (79=1.000)																		
WITHBASE	0.561	0.589	0.613	0.648	0.705	0.770	0.811	0.858	0.921	1.000	1.090	1.204	1.322	1.445	1.566	1.704	1.849	1.997
OFFSET	0.561	0.589	0.613	0.647	0.704	0.768	0.808	0.855	0.917	0.995	1.083	1.195	1.310	1.430	1.546	1.679	1.819	1.961
DIFF	0.000	0.000	0.000	0.001	0.002	0.002	0.003	0.003	0.004	0.005	0.007	0.009	0.012	0.016	0.020	0.025	0.030	0.036
%DIFF	0.000	0.020	0.066	0.151	0.241	0.296	0.347	0.391	0.432	0.550	0.645	0.745	0.908	1.091	1.292	1.500	1.668	1.854
Wholesale Price Index (79=1.000)																		
WITHBASE	0.467	0.483	0.504	0.571	0.678	0.741	0.776	0.823	0.888	1.000	1.141	1.290	1.451	1.624	1.775	1.949	2.147	2.347
OFFSET	0.467	0.482	0.503	0.569	0.675	0.737	0.771	0.819	0.882	0.992	1.130	1.276	1.432	1.598	1.741	1.907	2.097	2.287
DIFF	0.000	0.000	0.001	0.001	0.003	0.004	0.004	0.005	0.006	0.008	0.011	0.014	0.019	0.026	0.033	0.042	0.050	0.060
%DIFF	0.000	0.033	0.110	0.256	0.427	0.502	0.534	0.581	0.637	0.786	0.956	1.073	1.310	1.596	1.904	2.185	2.385	2.611
Consumer Price Index (79=1.000)																		
WITHBASE	0.534	0.556	0.575	0.611	0.678	0.740	0.783	0.834	0.898	1.000	1.134	1.265	1.394	1.527	1.654	1.796	1.949	2.107
OFFSET	0.534	0.556	0.575	0.610	0.677	0.739	0.781	0.831	0.895	0.996	1.129	1.257	1.384	1.513	1.637	1.774	1.923	2.076
DIFF	0.000	0.000	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.006	0.007	0.010	0.013	0.018	0.022	0.026	0.032
%DIFF	0.000	0.001	0.042	0.100	0.181	0.239	0.274	0.313	0.346	0.414	0.495	0.583	0.736	0.891	1.075	1.235	1.374	1.526
Annual Rate of Change																		
WITHBASE	5.9	4.2	3.3	6.3	11.1	9.1	5.7	6.5	7.8	11.3	13.4	11.5	10.2	9.5	8.4	8.6	8.5	8.1
OFFSET	5.9	4.2	3.3	6.2	11.0	9.1	5.7	6.5	7.7	11.2	13.4	11.4	10.1	9.3	8.2	8.4	8.4	8.0
DIFF	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2
%DIFF	0.0	0.0	1.3	1.0	0.8	0.7	0.7	0.6	0.5	0.7	0.7	0.9	1.7	1.8	2.4	2.0	1.8	2.0
Investment																		
Real Business Fixed Investment (79$)																		
WITHBASE	195.5	192.6	207.9	237.2	233.1	204.7	215.2	241.1	263.5	280.4	270.5	262.9	276.8	291.4	305.8	323.9	339.5	349.9
OFFSET	195.5	192.4	207.5	236.7	232.7	204.4	215.0	241.0	263.3	279.9	269.7	262.1	275.3	289.3	303.6	322.2	338.5	349.1
DIFF	0.0	0.2	0.4	0.5	0.4	0.3	0.2	0.1	0.1	0.5	0.7	0.8	1.5	2.0	2.2	1.7	1.1	0.8
%DIFF	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.2	0.3	0.3	0.6	0.7	0.7	0.5	0.3	0.2

Table 9 (Continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Producers' Durable Equipment																		
WITHBASE	111.9	111.0	123.1	145.3	147.5	129.7	137.6	160.0	174.3	183.8	175.2	171.0	179.9	190.0	199.4	211.3	222.1	229.9
OFFSET	111.9	110.9	122.8	145.0	147.2	129.6	137.6	160.0	174.2	183.6	174.8	170.5	179.0	188.8	198.2	210.5	221.7	229.8
DIFF	0.0	0.1	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.3	0.4	0.5	0.9	1.2	1.2	0.9	0.4	0.2
%DIFF	0.0	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.3	0.3	0.5	0.6	0.6	0.4	0.2	0.1
Nonresidential Construction																		
WITHBASE	87.4	85.2	88.0	94.3	86.9	76.1	78.4	80.6	88.8	96.5	95.8	92.3	97.3	101.5	106.6	112.8	117.5	119.8
OFFSET	87.4	85.2	87.8	94.1	86.7	76.0	78.3	80.5	88.7	96.3	95.5	91.9	96.6	100.7	105.6	111.9	116.8	119.1
DIFF	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.4	0.7	0.8	1.0	0.9	0.7	0.7
%DIFF	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.4	0.7	0.8	0.9	0.8	0.6	0.6
Housing Starts (mil. units)																		
WITHBASE	1.44	2.04	2.36	2.05	1.33	1.16	1.53	1.97	2.01	1.72	1.32	1.40	1.84	1.77	1.82	2.06	2.06	2.09
OFFSET	1.44	2.02	2.34	2.02	1.31	1.15	1.53	1.96	1.99	1.69	1.30	1.35	1.77	1.70	1.75	2.00	2.01	2.04
DIFF	0.00	0.02	0.03	0.03	0.02	0.01	0.01	0.01	0.02	0.04	0.03	0.05	0.08	0.07	0.08	0.06	0.06	0.05
%DIFF	0.00	1.06	1.08	1.29	1.62	0.58	0.35	0.49	0.87	2.11	2.14	3.85	4.30	4.40	4.45	2.98	2.75	2.69
Trade																		
Real Imports (79$)																		
WITHBASE	163.6	170.4	188.6	201.0	198.3	175.3	207.8	224.2	253.2	268.4	266.5	266.4	283.9	297.9	307.0	323.4	336.0	344.7
OFFSET	163.6	170.2	188.2	200.6	198.1	175.2	208.0	224.3	253.2	268.2	265.8	266.1	282.6	296.1	305.0	322.1	335.5	344.4
DIFF	0.0	0.2	0.4	0.5	0.2	0.0	-0.2	-0.1	0.0	0.1	0.7	0.3	1.3	1.9	2.0	1.3	0.5	0.3
%DIFF	0.0	0.1	0.2	0.2	0.1	0.0	-0.1	-0.1	0.0	0.0	0.2	0.1	0.5	0.6	0.7	0.4	0.2	0.1
Real Exports (79$)																		
WITHBASE	135.3	136.2	148.7	186.7	208.2	198.7	211.3	217.2	244.7	281.8	309.9	308.8	323.1	338.1	348.5	356.3	360.1	371.7
OFFSET	135.3	136.2	148.7	186.8	208.3	198.8	211.3	217.2	244.7	281.9	310.2	309.1	323.3	338.3	348.6	356.1	359.4	370.6
DIFF	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.2	-0.1	-0.1	0.0	0.2	0.7	1.1
%DIFF	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.1	0.2	0.3
Real Consumption (79$)																		
Motor Vehicles & Parts																		
WITHBASE	59.2	70.6	81.3	87.6	72.9	73.4	88.7	98.4	101.9	95.6	83.1	86.9	96.5	95.8	103.2	109.6	111.4	114.2
OFFSET	59.2	70.4	81.1	87.4	72.8	73.3	88.6	98.2	101.7	95.3	82.6	86.6	95.7	94.8	102.2	109.1	110.7	113.3
DIFF	0.0	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.6	0.4	0.8	1.0	1.0	0.5	0.7	0.8
%DIFF	0.0	0.2	0.2	0.3	0.1	0.2	0.1	0.2	0.2	0.2	0.7	0.4	0.9	1.1	1.0	0.5	0.6	0.7
Other Durables																		
WITHBASE	70.2	72.6	80.9	89.4	90.1	89.8	95.4	103.3	111.3	117.0	112.8	114.6	119.0	123.6	131.1	139.0	143.3	148.3
OFFSET	70.2	72.5	80.8	89.3	89.9	89.7	95.2	103.0	110.9	116.5	112.2	113.8	117.8	122.1	129.2	137.1	141.2	146.0
DIFF	0.0	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.4	0.6	0.6	0.8	1.2	1.6	1.8	1.9	2.1	2.4
%DIFF	0.0	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	1.0	1.3	1.4	1.4	1.5	1.6
Nondurables																		
WITHBASE	482.8	491.2	511.6	524.1	516.1	524.4	548.5	568.2	588.3	603.2	608.2	605.4	610.6	620.4	633.0	648.1	660.1	672.4
OFFSET	482.8	491.1	511.5	524.1	516.3	524.7	548.8	568.5	588.5	603.4	608.5	606.0	610.9	620.7	633.5	648.9	661.2	673.8
DIFF	0.0	0.1	0.1	0.0	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.6	-0.3	-0.4	-0.5	-0.8	-1.2	-1.4
%DIFF	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
Services																		
WITHBASE	485.7	503.0	527.9	550.5	564.7	583.0	607.9	635.4	670.0	697.2	715.4	735.1	754.5	777.3	806.2	837.9	867.1	896.5
OFFSET	485.7	502.8	527.7	550.1	564.3	582.7	607.5	634.9	669.5	696.4	714.4	733.9	752.7	775.0	803.5	835.1	864.0	893.1
DIFF	0.0	0.1	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.8	1.1	1.1	1.8	2.3	2.7	2.8	3.1	3.4
%DIFF	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4

Table 9 (Continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Incomes																		
Disposable Income																		
WITHBASE	695.3	751.8	810.4	914.9	999.0	1096.7	1195.1	1312.8	1464.8	1644.2	1824.9	2038.4	2303.8	2580.6	2888.4	3239.9	3599.4	3987.1
OFFSET	695.3	751.4	809.7	913.5	996.8	1094.0	1191.5	1308.3	1459.3	1639.8	1814.4	2025.1	2284.7	2554.9	2854.8	3196.6	3546.3	3922.0
DIFF	0.0	0.3	0.7	1.4	2.2	2.7	3.5	4.5	5.5	8.4	10.5	13.3	19.1	25.7	33.6	43.3	53.0	65.1
%DIFF	0.0	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.2	1.4	1.5	1.7
Real Disposable Income (79$)																		
WITHBASE	1221.7	1266.8	1317.3	1406.9	1395.5	1423.4	1474.6	1527.6	1595.5	1643.9	1654.9	1672.2	1723.4	1766.6	1826.4	1894.4	1946.4	1998.8
OFFSET	1221.7	1266.4	1316.7	1406.4	1395.4	1423.8	1475.0	1528.0	1595.8	1643.4	1654.8	1672.3	1722.6	1765.7	1825.7	1894.4	1947.1	1999.8
DIFF	0.0	0.4	0.5	0.4	0.1	-0.4	-0.3	-0.4	-0.3	0.4	0.1	-0.2	0.8	0.9	0.7	0.0	-0.7	-1.0
%DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Before-tax Corporate Profits																		
WITHBASE	75.5	86.5	100.8	126.0	136.9	132.1	166.2	193.1	224.3	256.2	245.6	230.7	265.4	295.3	313.2	391.4	403.6	433.2
OFFSET	75.5	86.1	100.0	124.7	135.6	131.0	165.0	191.5	222.4	252.5	241.7	226.0	257.3	285.8	302.5	380.6	392.4	419.4
DIFF	0.0	0.4	0.8	1.3	1.3	1.1	1.2	1.5	1.9	3.8	3.9	4.7	8.0	9.5	10.7	10.8	11.2	13.8
%DIFF	0.0	0.5	0.8	1.0	1.0	0.8	0.7	0.8	0.9	1.5	1.6	2.1	3.1	3.3	3.5	2.8	2.9	3.3
Aftertax Corporate Profits																		
WITHBASE	41.3	49.0	59.1	76.8	85.3	81.5	102.4	120.3	140.9	160.3	164.3	152.1	173.3	193.2	206.0	254.4	264.8	285.1
OFFSET	41.3	48.8	58.6	76.0	84.5	80.9	101.7	119.4	139.8	165.9	161.8	149.1	168.3	187.2	199.3	247.5	257.6	276.2
DIFF	0.0	0.2	0.5	0.8	0.8	0.6	0.7	0.9	1.2	2.4	2.5	3.0	5.0	5.9	6.7	6.9	7.2	8.8
%DIFF	0.0	0.5	0.8	1.0	0.9	0.8	0.7	0.8	0.8	1.4	1.5	2.0	3.0	3.2	3.4	2.8	2.8	3.2
Real Aftertax Profits (79$)																		
WITHBASE	76.5	86.7	100.6	125.2	125.5	105.8	127.1	140.8	153.0	168.3	150.7	128.5	133.5	136.4	134.3	152.7	146.9	146.7
OFFSET	76.5	86.3	99.9	124.2	124.8	105.4	126.8	140.4	152.5	167.0	149.6	127.1	131.1	134.0	132.0	151.4	145.9	145.5
DIFF	0.0	0.4	0.7	1.0	0.8	0.4	0.3	0.4	0.5	1.3	1.1	1.3	2.4	2.4	2.3	1.3	1.0	1.2
%DIFF	0.0	0.5	0.7	0.8	0.6	0.4	0.3	0.3	0.3	0.8	0.8	1.1	1.8	1.8	1.7	0.9	0.7	0.8
Other Indicators																		
State & Local Gov't Bond Rate (%)																		
WITHBASE	6.12	5.22	5.04	5.00	5.90	6.43	5.66	5.20	5.52	5.93	7.86	8.76	9.00	8.42	8.08	8.42	8.36	8.08
OFFSET	6.12	5.22	5.04	4.99	5.90	6.41	5.65	5.19	5.52	5.93	7.84	8.76	8.98	8.38	8.02	8.35	8.30	8.02
DIFF	0.00	-0.01	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.04	0.06	0.07	0.06	0.06
%DIFF	0.00	-0.11	-0.09	0.11	0.13	0.27	0.25	0.21	0.11	-0.06	0.13	0.09	0.27	0.48	0.69	0.78	0.73	0.73
Unemployment Rate (%)																		
WITHBASE	5.0	6.0	5.6	4.8	5.6	8.5	7.7	7.0	6.0	5.8	7.2	7.8	7.1	7.0	7.0	6.5	6.3	6.2
OFFSET	5.0	6.0	5.6	4.9	5.6	8.5	7.7	7.0	6.0	5.8	7.2	7.8	7.2	7.1	7.1	6.6	6.3	6.3
DIFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
%DIFF	0.0	-0.2	-0.6	-0.6	-0.4	-0.1	-0.1	-0.2	-0.2	-0.5	-0.6	-0.5	-1.1	-1.4	-1.4	-1.2	-1.0	-1.1
Industrial Production Index (79=1.000)																		
WITHBASE	0.707	0.718	0.785	0.851	0.848	0.772	0.854	0.906	0.959	1.000	0.963	0.977	1.059	1.105	1.153	1.229	1.258	1.292
OFFSET	0.707	0.717	0.784	0.850	0.847	0.771	0.854	0.905	0.958	0.997	0.960	0.974	1.053	1.097	1.146	1.224	1.252	1.286
DIFF	0.000	0.001	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.003	0.003	0.003	0.006	0.007	0.007	0.006	0.005	0.006
%DIFF	0.000	0.148	0.211	0.193	0.117	0.066	0.064	0.103	0.110	0.268	0.319	0.320	0.604	0.662	0.648	0.459	0.419	0.488

Table 10
Comparison of Alternative Simulations

	With Base Case	With Holding Money Supply Constant	With High Cost	With Low Cost	Without
Real GNP (Billions 79$)					
Level in 1980	2414.6	2411.2	2415.3	2414.6	2415.9
Level in 1987	2927.3	2918.0	2930.5	2928.9	2949.1
Growth Rate 1970-1987	3.0	3.0	3.0	3.0	3.1
Implicit Price Deflator (1979=1)					
Level in 1980	1.090	1.083	1.090	1.090	1.059
Level in 1987	1.997	1.961	2.000	1.980	1.860
Growth Rate 1970-1987	7.8	7.6	7.8	7.7	7.3
Unemployment Rate (%)					
Level in 1980	7.2	7.2	7.2	7.2	7.5
Level in 1987	6.2	6.3	6.2	6.5	6.7
Business Fixed Investment (Billions 79$)					
Level in 1980	270.5	269.7	270.5	270.5	268.4
Level in 1987	349.9	349.1	350.5	344.3	349.0